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ACCURATE AND PRECISE VIRAL QUANTIFICATION FOR RAPID VACCINE DEVELOPMENT IN- PROCESS PRODUCTION MONITORING USING RADIANCE® LASER FORCE CYTOLOGY™

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The biopharmaceutical world is evolving rapidly, bringing with it the need for technologies to support this fast-paced and changing environment. Trends in biomanufacturing are moving towards shortened development cycles as companies balance increased productivity requirements with the goal of reducing costs while at the same time ensuring production consistencies are met and batch out of specification (OOS) and failure events are minimized. LumaCyte's Radiance® instrument using Laser Force Cytology™ (LFC), a combination of advanced optics and microfluidics to rapidly analyze single cells based upon their intrinsic biochemical and biophysical cellular properties and without the need for antibodies or labels. Subtle cellular changes can be precisely captured with Radiance's automated workflow enabling new capabilities for measuring real-time product quality attributes to support R&D, process development and manufacturing needs across the biopharmaceutical industry. In this poster, LumaCyte demonstrates how tedious infectivity assays such as plaque and TCID50 can be replaced by Radiance's rapid viral infectivity quantification assay to provide significant shorter time to result (TTR), reduced labor, and improved data quality and consistency. In addition, the bioproduction of vaccines, viral vectors or VLPs can be monitored in real-time, enabling rapid optimization of key processes and increasing process knowledge. As a result, product yield can be increased using the same inputs and the likelihood of OOS events can be reduced. Radiance applications in oncolytic virus research and neutralization assays are presented as well. Overall, LFC delivers faster TTR and improved data quality for vaccine analytics from R&D to manufacturing.